

INTEGRATED PEST MANAGEMENT COMMUNICATIONS AND INFORMATION WORKSHOP FOR EASTERN AND SOUTHERN AFRICA (ICWESA)

1-6 March 1998, ICIPE, Nairobi, Kenya

FINAL REPORT

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Executive Summary

Integrated Pest Management (IPM) is a knowledge-based approach to crop protection which requires readily available site specific information for its successful implementation. IPM in Africa has had a limited impact in raising agricultural productivity in most sectors. Poor access to IPM knowledge and poor interactive networking have been major constraints in the effective development and implementation of IPM. Dissemination of crop protection technology options ranges from nationally-based extension programs and locally based innovative methods of technology transfer to internationally available experience. Access to such information is greatly facilitated by the tremendous development in electronic communications during recent years. The Internet has become a vast resource from which IPM information and experience can be drawn.

The workshop, which brought together the key stakeholders, was organized by the IPM Information Partnership, in collaboration with regionally-based NGOs and ASARECA, and took place in Nairobi, Kenya, from 1-6 March 1998. The Partnership was formed in 1996 between the main IPM networks in order to improve access to information. The first collaborative initiative of the Partnership was to provide a common access point to the partners electronically-stored data. The next step to make information available to the end users.

The **purpose** of the workshop was to explore ways to enhance access to electronic mail and the Internet and improve communication and knowledge transfer of IPM in sub-Saharan Africa. The ultimate aim is to facilitate delivery of IPM information in order to improve development and implementation by the farmer, in collaboration with research and extension intermediaries.

The **objectives** of the workshop were to promote interaction between key stakeholders, and: (i) characterize information needs; (ii) explore both the potential and limitations of electronic communication technologies as applied to IPM; (iii) identify and (iv) enhance networking opportunities and improved information sharing within the region.

The **program** comprised a series of keynote presentations on: information technology; IPM in sub-Saharan Africa (SSA); information needs, and global and African networks addressing information needs. Field trips were organized to key sites, and there were opportunities for hands-on sessions on computers, and Internet and e-mail possibilities. The plenary and group discussions, included: networking; information resources and needs; IPM information flows, and plans of action on key issues.

There were more than 80 **participants**: from sub-Saharan countries and international and development cooperation institutions. All key players involved in IPM research, extension and implementation, were represented, including national and international programs, NGO's, farmers and their representatives and the commercial private sector, information and electronic information specialists.

To ensure the fullest participation and maximize follow up potential, a workshop web site and internet laboratory were set up to enable participants and those accessing the network to read regular reports on deliberations and allow them to feed in contributions electronically before, during and after the workshop.

The workshop objectives were fully met. The **principal outputs** were: hands-on experience and a wider appreciation of the possibilities amongst those not familiar with the Internet; jointly conceived locally, nationally and regionally relevant strategies; follow-up mechanisms for IPM information sharing and dissemination in sub-Saharan Africa with eastern, southern and western sub-regional nodes, and improved links between the key players and existing IPM-relevant networking initiatives within the region. A number of key issues were discussed including: property rights & intellectual ownership; quality control; the "free-wheeling" nature and diversity of e-mail and the Internet, and the Internet and IPM.

Country and regional IPM coordinators were appointed by the participants in order to promote the organization of national and regional IPM committees. Outputs are already available on the workshop web site: <http://informatics.icipe.org/icwesa/> or <http://www.cals.vt.edu/ail/ipmcw/intro.htm> and full proceedings are expected in early 1999.

The four workshop objectives were tackled by finding ways to: empower IPM practitioners through improved access to relevant and reliable information throughout the sub-Saharan Africa; create and equip national nodes within a regional framework; create and enhance rural resource centers with the capacity to develop and disseminate IPM extension materials and develop IPM resource inventories at local, national and regional levels. Participants addressed these in logical framework format, providing the starting point for follow-up actions.

The workshop recommendations were to: establish regional and national IPM networking groups, comprising all disciplines (including agroforestry, etc.) responsible for follow-up. They would contact countries not represented; establish an Africa IPM Forum, or equivalent, to be linked to appropriate IPM focus groups elsewhere; develop annual work plans from 1999; identify mechanisms for information exchange and create a WWW web site.

BACKGROUND AND OBJECTIVES

Integrated Pest Management (IPM) is a knowledge-based system which by definition requires readily available site specific information for its successful implementation. IPM in Africa has had a limited impact in raising agricultural productivity in most sectors. Poor access to IPM knowledge and poor interactive networking have been major constraints in the effective development and implementation of IPM. Information dissemination of crop protection technology range from national based extension programs and locally based innovative methods of technology transfer to international available experience. Access to such information is greatly facilitated by the tremendous development in electronic communication during recent years. The Internet has become a vast resource from which IPM information and experience can be drawn.

A workshop was organized by the IPM Information Partnership. The Partnership was formed in 1996 between the principal organizations to improve access to IPM information. The first collaborative initiative of the Partnership was to create a Web site to provide a common access point for the partners electronically-stored data. The pilot workshop was the first step in a secondary phase towards making the information available to the end users. It was the culmination of 18 months planning carried out principally through e-mail. If successful, the possibilities would be investigated for replicating the workshop in other regions. Principal funders were USAID Bureau for Africa, and the Technical Centre for Agricultural and Rural Cooperation (CTA), but important complementary assistance was received from other participating organizations.

The **purpose** of the workshop was to explore ways in which access to the electronic mail and the Internet could enhance communication and knowledge transfer of IPM in sub-Saharan Africa. The ultimate aim is to facilitate delivery of IPM information in order to improve development and implementation of IPM by the farmer in collaboration with research and extension intermediaries. The **objectives** of the workshop were:

1. Characterize the information needs of IPM practitioners and transfer intermediaries.
2. Explore both the potential and the limitations of electronic communication technologies as applied to IPM problem solving, transfer and use.

3. Identify and enhance networking opportunities for IPM and improved information sharing among IPM practitioners and transfer intermediaries in the context of sustainable agriculture initiatives within the region.
4. Promote interaction and idea exchange among information and telematics specialists and key players involved in IPM research, extension and implementation, including national and international programs, NGOs, and commercial private sector (such as fresh produce exporters).

ORGANIZATION

The workshop took place 1-6 March 1998 at the International Centre of Insect Physiology and Ecology (ICIPE) in Nairobi Kenya.

The organizing partners were: the IPM Information Partnership (CAB International, CICP, CGIAR SP-IPM, IPMEurope, IPMForum, USAID's IPM CRSP); CTA, Global IPM Facility (FAO), ICIPE; ICRAF; and USAID Bureau for Africa (Africa IPM Link, AfricaLink, and Leland Initiative), in collaboration with regionally-based NGOs and ASARECA, representing the African regional agricultural research fora. Because the latter were only represented at junior level, a future action point will be to consult with senior representatives on their involvement in follow-up.

PROGRAM OF THE WORKSHOP

The program (attached as Appendix 1) consisted of keynote presentations on telematics and IPM. Country perspective studies on IPM practitioners and their information needs were given by country representatives from Botswana, Cameroon, Ethiopia, Ghana, Kenya, Uganda and Zambia. Emerging and existing African networks addressing the information needs of IPM practitioners were presented by the representatives of the different networks. Existing global electronic information resources and networks were also highlighted. During the working evenings there were hands-on sessions on computers, Internet and e-mail possibilities and presentations of IPM, information and other related topics. There were a number of plenary and group discussions on:

- provocative themes and questions on networking;
- information resources and needs, bridging the gap and identifying the needs;
- information flows of IPM between the actors involved, and
- brainstorming on key issues and plans of action.

Field trips were organized to: vegetable and coffee farmers; the facilities at CABI, ICIPE and ICRAF and the Regional Centre for Remote Sensing.

There were about 40 participants from sub-Saharan countries, 20 persons from international and development cooperation institutions and 20 persons from the organizing committee and resource persons. All key players involved in IPM research, extension and implementation, were represented, including national and international programs, NGO's, farmers and their representatives and the commercial private sector, information and telematics (electronic information) specialists. A list of participants is appended.

NETWORKS

Some existing networks and related enterprises within Africa were presented during the workshop, among which included:

- Communities and the Information Societies in Africa (ACACIA). An international effort to empower sub-Saharan communities with the ability to apply information and communication technologies to their own social and economic development. Funded by the International Development Research Centre (IDRC) of Canada. Managed from the regional offices of IDRC in: Nairobi, Kenya; Dakar, Senegal, and Wits, South Africa.
- Pan-African Striga Control Network (PASCON)
- Ecological Sustainable Cassava Plant Protection (ESCCaPP) (Managed by IITA).
- NGO Action Groups for IPM.
- Pesticide Action Network Africa (PAN) (managed from Dakar, Senegal). Publishes the journal *Pesticides & Alternatives*. three times a year.
- NGO support Centre for Sustainable Agriculture (managed by PAN Africa, Dakar, Senegal).
- East and Southern Africa Stem-borer Network (managed from ICIPE Nairobi).

- GTZ East and Southern Africa Regional Vegetable IPM Project.
- Africa Museum networks (directed from the National Museum of Namibia). Sponsored by the Swedish African Museum Programme (SAMP) and the International Council of Museums (ICOM).
- BioNET-International is a global network of biosystematics, which is currently concerned with invertebrates and microorganisms. It comprises interlinked sub-regional Loops, that are made up of developing country institutions. The program is managed by BioNET-International Consultative Group (BICC). The southern Africa Network (SAFRINET) composed of SADC countries was presented.
- CARE Knowledge Centre.
- Other African research networks, supported in part by USAID and by AfricaLink are: ASARECA (research management), ECABREN (beans), PRAPACE (potatoes), AFRENA (agroforestry), EARRNET (root crops), AHI (African Highlands Initiative, natural resource management), ANAFE (agroforestry education), CARNET (cattle), and AFRNET (feed resources), maize/wheat network, and
- ICIPE PESTNET experience and insect informatics initiative.

A list of participants is provided at Appendix 2.

IPM AND INTERNET IN AFRICA

Useful entrances for IPM in general or for Africa are two Universal Resource Locators (URL):

In general, there is:

IPMnet - <http://www.IPMnet.org>

This site is managed by CICP and provides information on IPM definitions, IPM concepts, case histories, current research, IPM resources and technical and professional organizations.

IPM Focus - <http://www.nri.org/IPMFocus/> (Under Development)

This site is managed by the IPM Information Partnership and provides access to the partners Web sites; CICP, CGIAR SP-IPM, IPMEurope and the IPMForum, with others including CAB International to be added.

For Africa specifically, there is Africa IPM Link - <http://informatics.icipe.org/ail/>
or <http://www.cals.vt.edu/ail/index.html>

Africa IPM Link is a project of the IPM CRSP managed by the Office of International Research and Development of Virginia Polytechnic Institute and State University (also known as Virginia Tech) in Blacksburg, Virginia, U.S.A. Africa IPM Link's role is to foster IPM information dissemination in Africa in collaboration with AfricaLink, a USAID initiative to facilitate access to the Internet and training for its colleagues and partners in Africa, and with the Consortium for International Crop Protection (CICP).

DATABASES

CABI Crop Protection Compendium. This is available on CD-Rom for US\$ 2000, (developing countries US\$ 500) with an annual update costing US\$ 500. It gives outline information for 1000 insect pest, disease and weed species of the world and their natural enemies, with synonyms, host range, and geographical range (mapped). There are selected agricultural and pest management data for all countries. It has in-depth information on South-East Asia and the Pacific. Free demos can be obtained from CAB International. Check the URL: <http://pest.cabweb.org/cpc/cpchp.htm>.

Database of Information Resources (DIR). A major component of IPMnet. It is a continuously updated and expanded information retrieval and referral system for the worldwide electronic IPM resources. DIR has three main components including directories of Internet IPM resources, search engines, and informational databases/knowledge bases. Currently, DIR contains seven bibliographic databases, four knowledge bases and a database with more than 3,700 documented Internet resources and their hyperlinks searchable through its search engines. DIR presents Internet IPM resources in a logical, structured, and searchable way that greatly reduces the frustration and disappointment often encountered when using general search engines on the web. It covers a wide array of crops, pests, control tactics, organizations, technical/scientific societies, educational and research institutions, and related topics in a format that is searchable, highly customized and user-friendly. With DIR directories and search engines, one can quickly focus on the desired information, as distilled from thousands of IPM Internet information resources. This database is available at <http://ippc.orst.edu/DIR> and via IPMnet. The overall goal of the Database of IPM Resources (DIR) is to promote global IPM development and adoption through rapid access to information all across the Internet. There is no other service or system available on the Internet that can parallel

the goals, objectives and capabilities of DIR. This database is designed to become the focal point on the Web for research and extension specialists, pest management practitioners, students, teachers, crop consultants and policy makers.

GPPIS database of the FAO. This is a Web-based, interactive, multimedia compendium of plant protection information. It consists of a set of standard methods and protocols for data collection and maintenance under password protection. GPPIS data are in the public domain because its contents is created and maintained by a community of specialists who choose to participate in the evolution of GPPIS. Data contribution by sponsors and supporters is voluntary. The individual specialists or specialists from organizations are responsible for certain pests, diseases or weeds and update and change the database. FAO oversees the whole operation and approaches or authorizes individuals to be the editors. The site on Internet is: <http://pppis.fao.org/>

SOME ISSUES THAT WERE DISCUSSED

Property rights and intellectual ownership. A number of experts indicated that eventually so much information will become available on the Internet that commercialization of particular information will be difficult.

Quality control. Maintaining information quality is a special challenge, because one can in principle put anything on the Internet. Measures should be taken by web site hosts to assure certain agreed-upon standards, such as identifying authors, having a referee process, and providing dates. Certain web sites will acquire a reputation for reliability, and updating, in particular when the information provided has been refereed.

The "free-wheeling" nature of e-mail and the Internet media. National or government institutions in developing countries are often organized in a rather hierarchical way. E-mail communications and the Internet are by-passing such an hierarchical organizational system. Therefore, those institutions should develop protocols relating to the kind of information that should pass through their management. Another problem indicated was that access to e-mail and Internet could create an electronic elite, and not necessarily at the top level. Such problems can be avoided by giving access to electronic media by everyone within an institute and/or by assuring that management provides reasonably free access while retaining necessary management control over such electronic communication means.

Internet and IPM. It would represent a non-optimal use of resources if IPM were to be promoted only by providing electronic access to information by research institutes alone, extension officers alone, or farmers alone. Interactive networking on IPM experiences is probably more important. IPM information on the Internet can very often not reach the farmer directly. It has to be translated from the end of the communication line in a verbal or printed form to the Extension Officer and then to the farmer. The end of the line could be a Ministry of Agriculture, an NGO, a research institution or a resource center for extension officers. By doing so the information has to be formatted in another manner and it is possible that information is deformed or lost during the process. There is also the reverse process of farmers providing information which may be of interest to other farmers, extension officers and research people. Then also the information has to pass through conversions in order to reach the Internet or e-mail.

In Zimbabwe, a new program on Integrated Production and Pest Management (IPPM) began in 1997. It is jointly funded by the Government of Zimbabwe and the FAO (TCP/ZIM/6712) and aims to provide education programs to farmers in communal and resettlement areas of Zimbabwe. Twenty one staff are being trained in a season-long Training of Trainers program involving 150 farmers in five field schools. Electronic communication and IPM web-access play a very important part in this endeavour.

OTHER OUTCOMES

The workshop objectives were fully met through hard work and long hours on the part of the organizing group, in which representatives of the organizing institutions played a full part. This effort was matched by the participants response. The principal outputs were: hands-on experience and a wider appreciation of the possibilities among those not familiar with the Internet; jointly conceived locally, nationally and regionally relevant strategies; follow-up mechanisms for IPM information sharing and dissemination in sub-Saharan Africa with eastern, southern and western sub-regional nodes; and improved links between the key players and existing IPM-relevant networking initiatives within the region.

In order to ensure the fullest participation and maximize follow up potential, a workshop web site was developed and a laboratory was set up to enable participants to interact and those in the network to read regular reports on deliberations and feed in contributions electronically before and during the workshop. A computer laboratory was funded by USAID and established at ICIPE for use during the workshop and afterwards.

Outputs are already available on the workshop web site:

<http://informatics.icipe.org/icwesa/>

or

<http://www.cals.vt.edu/ail/ipmcw/intro.htm>

The full proceedings are expected to be available from the IPMForum by the end of this year 1998.

CONCLUSIONS AND RECOMMENDATIONS

The workshop addressed the way forward in terms of the key issues identified, and formulated follow-up actions and strategies to be pursued. Four different themes were tackled in working groups, to work out agreed-upon objectives and actions in a logical framework. The working groups were:

1. **Creation and equipping National nodes within a Regional Framework:**
2. **Rural Resource Centres.** Rural resource centres with the capacity to develop and disseminate IPM extension materials.
3. **The IPM Inventory Initiative in sub-Saharan Africa:** Develop an inventory of sector-oriented IPM resources in sub-Saharan Africa at the local, national, regional and global levels.

The workshop formulated the following **recommendations**:

Establish regional and national ad hoc IPM networking working groups to carry out the follow-up from this ICWESA workshop. Countries not represented need to be contacted by the regional IPM committee.

All disciplines need to be represented in the IPM working groups (including agroforestry, etc.).

Identify mechanisms such as this sort of workshop to exchange dynamic information (every two years).

The regional IPM committee should establish an Africa IPM Forum, or equivalents, and link it to appropriate IPM focus groups elsewhere.

The regional IPM committee should come up with an annual work plan; the first for 1999.

A site should be established for the African IPM Forum. On an interim basis, it was suggested, this should be the workshop web site at ICIPE. A prototype web site, IPMAfrica, has already been designed, but will need to be validated by the African working groups, and maintained, if endorsed. It should include all disciplines.

Country and regional IPM coordinators were appointed by the workshop in order to promote the organization of national and regional IPM committees. They are detailed below.

ICWESA FOLLOW-UP STEERING COMMITTEE

Southern	Denash Giga
Eastern	Sam Kyamanywa
Horn	Tsedeke Abate
IPM Europe	Malcolm Iles

Esther Lwanga-Semakula of Uganda was nominated for follow-up under Group 1, Objectives, outputs and activities of IPM development and implementation projects through improved communication.

EASTERN AND SOUTHERN AFRICAN AD HOC REGIONAL COMMITTEE

Southern	Denash Giga
Eastern	Sam Kyamanywa
Horn	Tsedeke Abate

Ad hoc committee members have access to e-mail but not exclusively; target program not group or individual

NATIONAL AD HOC CONTACT PEOPLE

Eritrea	Mehari Tesfayohannes
Ethiopia	Tsedeke Abate
Uganda	Sam Kyamanywa
Kenya	Gilbert Kibata
Tanzania	Monsiapike Kajimbwa
Zanzibar	Omar Mohamed
Mozambique	Verona Parkinson (NGO, temporarily)
Malawi	Vincent Saka
Namibia	Berthold Wohlleber
Zambia	Sina Luchen
Botswana	Rebecca Kolare
Zimbabwe	Simon Sithole

South Africa Johann Möhr

WEST AND CENTRAL AFRICA

Regional/University

Kwame Afreh-Nuamah

Regional NGO

Abou Thiam

Regional/International - Nigeria

Segun Toyosi Lagoke

National - Cameroon

Ambe Tumenteh

SUB-REGIONAL AD HOC COMMITTEE LEADING TO NODES

1. Participants "go with the torch" to take initiatives in their own countries with the goal of establishing national IOPM networks.

2. Meeting - democratic process- appoint appropriate members

3. Resources

- Seed money
 - basic costs
 - Opportunism
 - meetings
 - Ongoing projects, networks
-
-

APPENDIX 1: SUMMARY WORKSHOP PROGRAM

INTEGRATED PEST MANAGEMENT (IPM) COMMUNICATIONS AND INFORMATION IN EASTERN & SOUTHERN AFRICA (ICWESA)

International Centre of Insect Physiology and Ecology (ICIPE) Nairobi, Kenya; 1- 6 March 1998

Sunday, 1st March, 1998

Arrivals, Registration and Informal Reception, ICIPE

Monday March 2, 1998 Theme: Networking - Setting the Stage

Opening: Welcome, Introductions, Workshop Logistics

Session 1: Keynote Presentation: An Introduction to Telematics in Africa

Presenter: S. Ochuodho, African Regional Center for Computers (ARCC), Nairobi

Session 2: Keynote Presentations on IPM and Networking

Purpose: Provide a current perspective on what IPM is, how it is doing in Africa and how information and networking relate to it.

Session 2A: **Making IPM work for resource-poor and transitional production systems in sub-Saharan Africa**; A. van Huis, Wageningen Agricultural University, Netherlands

Session 2B: **An Integration of Information and Communications: Perspective for Agricultural and Rural Development in Eastern Africa**; A. Mailu, Deputy Director General, KARI, Kenya & Chairperson, ASARECA Working Group on Information and Documentation (Presented by W. Gitonga, Scientist, KARI Muguga Station)

Session 3: Networking for Development

Purpose: Explore representative non-IPM networking developments in Africa to set the stage for the IPM-focussed sessions for the rest of the week and raise generic questions and issues.

Session 3A: Networking for rural health; Fred Bukachi, Healthnet

Networking in the National Agricultural Research Organization in Uganda; Esther Lwanga-Semakula, Agricultural Research & Information Serv., NARO

Agricultural Research Networking in Eastern and Central Africa; Michael Hailu, ICRAF

Session 3B: Group discussions: "Provocative" Themes/Questions on Networking

Purpose: To stimulate thought about, and discussion of, major telematics information management issues that will likely pertain to IPM networking

Session 3C: Report of groups and general discussion

Session 4: Desired Outputs of the Workshop and How to Achieve Them

Purpose: To discuss a process to ensure that the desired workshop outputs are identified and achieved - prioritize and add to existing workshop objectives, outputs

Session 4A: Group discussions

Session 4B: Report of groups and general discussion

Evening Hands-on Session: Computers and E-mail Possibilities

Purpose: To those interested, both novice and experienced, provide opportunity for hands-on sessions on use and application of computers, addressing individual concerns, and to provide an opportunity to gain personal exposure to accessing and using e-mail

Tuesday, 3rd March, 1998 - Theme: Addressing Information Needs

Session 5 Title: IPM Practitioners and their Information Needs

Purpose: To define the "IPM community" stakeholders -- farmers, extensionists, researchers, intermediaries, policy makers. What do they need? What do they have? Current status based on country perspective studies.

Country Perspectives:

Cameroon; A. Tumanteh, IRAD

Ethiopia: National networking; T. Abate, EARO

Ethiopia: Biovillage Concept and Developments; G. Tikubet, ICIPE

Ghana; K. Afreh-Nuamah, Univ of Ghana

Kenya: IPM activities in vegetables & coffee; B. Nyambo

Uganda; S. Kyamanywa, Makerere Univ.

Zambia; S. Luchen, NIRS

Session 6: Practical Demonstration: E-mail & enhancements, CD-ROM, Zip drives, etc.

Purpose: To provide a guided tour of the more practical electronic communications and information management tools and options.

Session 7: Information Resources and Needs -- Bridging the Gap

Purpose: To review the varieties and status of existing information resources, and providing participants an opportunity to define their information needs and how they might be best met.

Session 7A: Guide to IPM Information on the Web; J.P. Amirault, Virginia Tech, Africa IPM Link

IPM-relevant Networking Initiatives in Africa

Non-Internet information in and pertinent to Africa; G. Schaefer, CACP, USA

IPM Training and Extension Materials: catalogue and database; F. van Alebeek, Wageningen Agricultural University, Holland
Session 7B: Group discussions: Information Resources and Needs: Bridging the Gap and Identifying Key Issues Actions
Session 7C: Report of groups and general discussion

Session 8: African Networks Addressing Information Needs of IPM Practitioners

Purpose: To highlight examples of emerging information technologies and existing functioning networks, whether telematically advanced or not, applied to real-life information needs of pest management professionals and practitioners.

- Pan-African Striga Control Network (PASCON); S.T.O. Lagoke, Ahmadu Bello Univ., Nigeria
- NGO Action group for IPM; M. Mihowa, Malawi
- NGO support Center for Sustainable Agriculture; A. Thiam, PAN Africa, Senegal
- East and Southern Africa Stem-borer Network; W. Overholt, ICIPE, Kenya
- East and Southern Africa Regional Vegetable IPM Project; A. Seif, GTZ, Kenya

Evening Hands-on Session: IPM information on the Worldwide Web

Purpose: To provide an opportunity for those interested to gain direct experience with accessing IPM information on the Worldwide Web.

Evening Demonstration Session: Websites and other Internetworking Tools

Purpose: To provide a spontaneous opportunity for workshop attendees to share their website or related internetworking initiatives with others interested.

Wednesday, 4th March - Theme: Designing IPM Communications in Africa

Session 9 Existing Global Electronic Information Resources & Networks

Purpose: To provide a snapshot of some of the more well established IPM information resources on electronic media and elicit reactions from the group as to their perceived relevance in Africa

- International IPM Partnership; M. Iles, NRI and R. Markham, IITA
- Spotlight on the U.S. National IPM Network: on-line; R. Stinner, CIPM
- Status of CABI Crop Protection Compendium: Its Utility in Africa; H. Munyua, CABI
- Live overview of CIPM's IPMnet; G. Schaefer, CIPM
- On-line Tour of the Database of IPM Resources (DIR); W. Bajwa, IPPC
- Africa IPM-Link and IPM CRSP; J.P. Amirault and B. Gebrekidan, IPM CRSP

Session 10: IPM Networking in Africa (cont'd. from Session 8)

Ecologically Sustainable Cassava Plant protection (ESCaPP); B. James, IITA
BIONET: Biosystematic Support Services to IPM; C. Eardley, PPRI, South Africa
Global Plant Protection Information System (GIPPS); T. Putter, FAO, Rome

Session 11: Designing a framework for electronic networking and network support

Purpose: To consider model and prototype approaches to applying emerging electronic technologies to facilitate the dissemination of information to strengthen the acquisition of knowledge, and to shape a "learning organization" serving key user groups

Session 11A: Presentations

- Acacia: Communities & Information Societies in Africa; J. Baraza, IDRC, Kenya
- ICIPE PESTNET and Insect Informatics; Y. Xia, ICIPE, Kenya
- CARE Knowledge Center; J. Scoggan, CARE/Canada, & M. Ndungu, CARE/Kenya
- Global IPM Facility Networking; T. Putter, GIPMF, FAO, Rome
- African Museum Networks; J. Komen, Namibia National Museum

Session 11B: Group discussions: Promoting idea exchange among IPM and telematics specialists on networking and knowledge transfer modalities to address the needs of:

- Farmers & farmers' groups -- small, emerging, commercial, associations
- Extension, NGO's, other intermediaries
- Researchers (NARES, KARI, ICIPE, IIBC, etc)
- Commercial Private sector
- Node/network/service providers/clients interface
- Video on IPM Knowledge and Cashew in Southeast Tanzania; N. Nathaniels, Rural Integrated Project Support, Gov. of Tanzania

Discussion: "The next generation of IPM: mutual empowerment of farmers, extensionists and researchers with the help of electronic communications technologies: the case of Tanzania and cashew. Two situations to be discussed by each group: (a) a classical problem solving situation and (b) making a video on FFS in cashew available. Discuss in very concrete practical terms: what are the steps, actors, networking options, electronic technologies to be invoked?"

Thursday, 5th March - Theme: Developing Plans for Improving IPM Communications and Information in Eastern and Southern Africa

Session 11C: Report of groups and general discussion

Session 12: African Websites, Databases, and Interactive Access

Improving Communications to Meet the Information Needs of Forest Pest Management and Agroforestry Practitioners in Africa; J. Mwangi, KEFRI, J. D. Ward, USDA Forest Service and G.K. Douce, Univ. Georgia

A Prototype "IPM Africa" website: not how, but who, what, where, when, and why? R. Stinner

Session 13: Working Groups to Address Key Issues and to Identify Initiatives and Preliminary Follow-up Actions & Strategies

Purpose: Building on outputs of foregoing sessions, develop recommendations and guidelines on forms of networking, information content, information outputs, partnerships. Brainstorming process to formulate working group themes: identifying initiatives

Session 13A: Group discussions:

- Create and equip national nodes for internet (& e-mail) in a regional framework
- Rural resource centers with capacity to develop educational materials
- Identify existing and missing links and needs (inventory)

Session 13B: Report of groups and general discussion

Working Session for Writing/Drafting Groups

Field Trips:

1. Remote Sensing Center, ICRAF, CABI
2. CABI & IIBC, ICIPE, KARI pest management field sites

3. Commercial vegetable and fruit producer(s)
4. ICIPE Campus: Apiculture Improvement, Sericulture Improvement, Neem Production Plant

Friday, 6th March - Theme: Synthesis and the Way Ahead

Session 14: The Way Ahead: Strategies, Frameworks, Plans

Purpose: To identify, prioritize and address strategies and organizational challenges of the next five years

Break out Groups:

National plan development, Regional Strategies, Topical and Technical Themes

Session 15: The Way Ahead: Developing Recommendations

Purpose: To report out on discussion in Session 14 and brainstorm on actions and recommendations

Session 16: Challenges, Outlook and Workshop Synthesis: What Next in IPM and Telematics in Africa?

Purpose: To review the workshop synthesis, present key conclusions and recommendations

Closure and Vote of thanks.



PARTICIPANTS:

For individual participants, click on their country below

[Botswana](#)	[Cameroon](#)	[Eritrea](#)	[Ethiopia](#)	[Ghana](#)	[Kenya](#)	[Malawi](#)	[Mozambique](#)	[Namibia](#)
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from BOTSWANA

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CABI. Learning about ecological agriculture: CABI Bioscience activities in farmer participatory training. 6 pp. CABI Bioscience.

Gebrekidan B., J.P. Amirault, and T. Abate, eds. 1996. IPM Networking in Sub-Saharan Africa: Proceedings of the IPM Networking in Sub-Saharan Africa Workshop, 14-16 October 1996, Addis Ababa/Nazareth, Ethiopia. IPM CRSP/Virginia Tech, 74 pp.

Harris, K.M. and P.R. Scott, 1989. Crop Protection Information: an international perspective. C.A.B. International. Proceedings of the International Crop Protection Information Workshop held at CAB International, Wallingford.

Huis, A. van, and F. Meerman, 1997. Can we make IPM work for resource-poor farmers in sub-Saharan Africa? International Journal of Pest Management, 43: 313-320.

IPMForum, 1998. Integrated pest management Forum promoting sustainable agriculture in developing countries.

Stinner, R.E., 1998. Pest management and the Internet: a beginning guide to Internet access for international Agriculture. NSF Center for Integrated Pest Management. 11 pp.

ACRONYMS AND DEFINITIONS

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Acacia	Initially launched by Canada's International Development Research Centre (IDRC), the Acacia Initiative is an international effort to empower sub-Saharan African communities with the ability to apply information and communication technologies to their own social and economic development.
ACP	Africa, Caribbean and Pacific
ADB	African Development Bank
AELGA	African Emergency Locust and Grasshopper Assistance (USAID Project
AFRENA	Agroforestry Research Network in Africa East and Central
AFRNET	Feed Resources Research Network
AGRICOLA	Agricultural On-line Abstracts
AGRIS	Agricultural Research Information System
AGRITEX	Developmental Agriculture and Extension Service (Zimbabwe)
AHI	African Highlands Initiative
AISI	African Information Society Initiative
ANAFE	Agroforestry Education
APC	Association Pro. Communication
ARC	Agricultural Research Council (South Africa)
ARIS	Agricultural Research Information Service (Uganda)
ASARECA	Association for Strengthening Agricultural Research in East and Central Africa
BARNESA	Banana Research Network for East and Southern Africa
BC	Biological Control
BICG	BioNet International Consultation Group
CABI	Centre for Agriculture and Biodiversity International
CARDI	Caribbean Agricultural Research and Development Institute
CARE	Global NGO
CARNET	Cattle Research Network

CATIE	Centro Agronómico Tropical de Investigación y Enseñanza - (Tropical Agricultural Research and Higher Education Center, Costa Rica)
CD-ROM	Compact Disc-Read Only Memory
CGIAR	Consultative Group on International Agricultural Research
CIAT	Centro Internacional De Agricultura Tropical
CICP	Consortium for International Crop Protection
CIDA	Canadian International Development Agency
CIIFAD	Cornell International Institute for Food and Agricultural Development
CIP	Centro Internacional de la Papa (Int. Potato Inst., Peru)
CIPM	Center for Integrated Pest Management
CIRAD	Centre de coopération internationale en recherche agronomique pour le développement
CORAF	Conférence des responsables de la recherche agronomique africains
CRDA	Christian Relief and Development Association
CRS	Catholic Relief Services
CTA	Technical Centre for Agricultural and Rural Cooperation
CURE	Coordination Unit on Rehabilitation of the Environment
DFID	Department for International Development (UK)
DIR	Database of IPM Resources
EARO	Ethiopian Agricultural Research Organization
EARRNET	East African Rootcrops Network
ECA	Economic Communications in Africa
ECABREN	Eastern and Central Africa Bean Research Network
ECAPAPA	Eastern and Central Africa Program for Agricultural Policy Analysis
ECOWAS	Economic Community of West African States
ERO	Ethiopian Research Organization
ESCaPP	Ecologically Sustainable Cassava Plant Protection
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FIDONET	Non-commercial, volunteer network of computer systems
FPEAK	Fresh Produce Export Association of Kenya
GCPF	Global Crop Protection Federation
GIPMF	Global IPM Facility
GPPIS	Global Plant Protection Information System
GTZ	Gesellschaft für Technische Zusammenarbeit GmbH (Germany)
IARC	International Agricultural Research Centre
ICIPE	International Centre for Insect Physiology and Ecology
ICOM	International Council of Museums
ICRAF	International Centre for Research in Agroforestry
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICT	Information and Communication Technology
ICWESA	IPM Communications Workshop: Eastern and Southern Africa
IDEA	Investment in Developing Export Agriculture
IDRC	International Development Research Centre (Canada)
IIBC	International Institute for Biological Control

IIRR	International Institute for Rural Reconstruction
IISD	International Institute for Sustainable Development
IITA	International Institute for Tropical Agriculture
INIA	National Directorate of Culture (Mozambique)
INRA	Institut national de la recherche agronomique (France)
INSAH	Institut du Sahel
IPM	Integrated Pest Management
IPM CRSP	IPM Collaborative Research Support Program
IPPC	Integrated Plant Protection Center
IPPM	Integrated Production and Pest Management
IRAD	International Research for Animal Development
IRLCO	International Red Locust Control Organization
ISNAR	International Service for National Agricultural Research (The Netherlands)
ISP	Internet Service Provider
IUFRO	International Union of Forestry Research Organizations
KADOC	Kenya Agricultural Documentation and Information Centre
KAfri	Kenya Forest Health Centre
KARD	Kenya Agricultural Research Database
KARI	Kenya Agricultural Research Institute
LAN	Local Area Network
MOA	Ministry of Agriculture
NAPREECA	Natural Products Research Network for East and Central Africa
NARO	National Agricultural Research Organization (Uganda)
NARS	National Agricultural Research Systems
NATURA	Network of European Agricultural (Tropically and Subtropically Oriented) Universities and Scientific Complexes Related with Agricultural Development
NGO	Non-Governmental Organization
NIPMN	National IPM Network (U.S.)
NIRS	National Irrigation Research Station (Zambia)
NRI	Natural Resources Institute (UK)
NSF	National Science Foundation
OAu	Organization for African Unity
OECD	Organization for Economic Cooperation and Development
ORSTOM	Institut de recherche pour le développement en coopération (France)
PADIS	Pan African Development Information System
PAN	Pesticide Action Network
PASCON	Pan African Striga Control Network
PC	Personal Computer
PFARD	Peasant Farmers Association for Rural Development (Uganda)
POP	Point of Presence
PPRI	Plant Protection Research Institute
PRAPACE	Regional Potato and Sweet Potato Improvement Program (E & S Africa)
PTC	Postal Telephone and Communications
PVO	Private Volunteer Organization

R&D	Research and Development
SAAINET	Southern Africa Agricultural Information Network
SACCAR	Southern African Centre for Cooperation in Agricultural and Natural Resources Research and Training
SADC	Southern African Development Community
SAFRINET	Southern Africa Network
SAMP	Swedish African Museum Programme
SANGONET	Southern Africa NGO Network
SPAAR	Special Program for African Agricultural Research (USA)
SP-IPM	CGIAR system-wide Program for IPM
SSA	SUB SAHARAN AFRICA
UNESCO	United Nations Education, Scientific and Cultural Organization
URL	Universal Resource Locator
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
WARDA	West African Rice Development Association
WWW	World Wide Web
ZEGA	Zambian Export Growers Association

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